



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

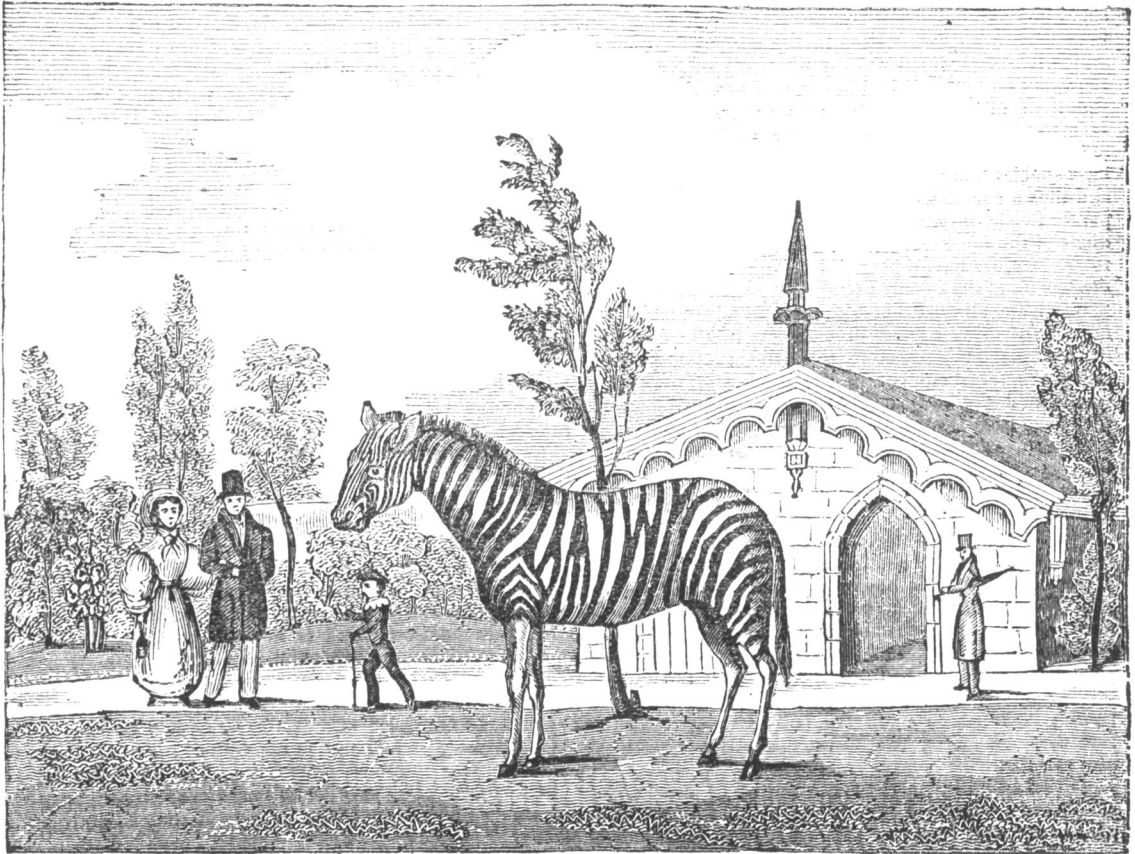
THE
DUBLIN PENNY JOURNAL

CONDUCTED BY P. DIXON HARDY, M.R.I.A.

Vol. IV.

APRIL 23. 1836.

No. 199.



THE ZEBRA.—VIEW IN THE ZOOLOGICAL GARDENS.

The zebra is the most beautiful, and at the same time the wildest animal in nature. Nothing can exceed the delicate regularity of this creature's colour, or the lustrous smoothness of its skin: but, on the other hand, nothing can be more timid or more untameable. The zebra in shape rather resembles the mule than the horse or the ass; it is rather less than the former, and yet larger than the latter. Its ears are not so long as those of the ass, and yet not so small as in the horse kind. Like the ass, its head is large, its back straight, its legs finely placed, and its tail tufted at the end; like the horse, its skin is smooth and close, and its hind quarters round and fleshy. But its greatest beauty lies in the amazing regularity and elegance of its colours. In the male, they are white and brown; in the female, white and black. In the common zebra these colours are disposed in alternate stripes over the whole body, and with such exactness and symmetry, that one would think nature had employed the rule and compass to paint them. These stripes, which, like so many ribands, are laid all over its body, are narrow, parallel, and exactly separated from each other. It is not here as in other party-coloured animals, where the tints are blended into each other; every stripe here is perfectly distinct, and preserves its colour round the body, or the limb, without any diminution. In this manner are the head, the body, the thighs, the legs, and even the tail and the ears, beautifully streaked, so that at a distance one would be apt to suppose that the animal was dressed out by art, and not thus admirably adorned by nature.

VOL. IV.—NO. 43.

ON THE STRUCTURE OF ANIMALS.

As connected with the remarks introductory to the description of some of the animals in the Zoological Gardens, which we gave in our two preceding numbers, the following observations on the structure of some portions of the human frame, which, as we have already remarked, may be taken as the model of construction for the entire class of animals termed *mammalia*—for all quadrupeds, and in a lesser degree even for others—will not, we trust, be deemed uninteresting. From the junction of the very important science of comparative anatomy with those of geology and zoology, what a vast fund of information has been within a very few years obtained, as compared with what was known, even to men of science, but a very short time since. A recent writer on this subject observes, that “the discoveries of philosophers, who have occupied themselves in comparing the anatomical structure of the lower animals with that of the human frame, and have created the interesting and beautiful department of science called comparative anatomy, have enabled them to establish certain fixed and invariable principles for our guidance in this curious branch of geological inquiry. This field of investigation has only been entered upon within a few years; but it has already yielded so rich a harvest, that it has established some of the most important truths connected with the past history of our planet. The great discoverer of those general laws of the animal kingdom was the illustrious French naturalist, the Baron Cuvier.

337

He has shown that there reigns such a harmony throughout all the parts of which the skeleton is composed, so nice an adaptation of the forms to the wants and habits of the animal, and such a degree of mutual subordination between one part and another in portions of the structure apparently quite unconnected, that we are enabled, by the inspection of a single bone, to say with certainty that it must have belonged to a particular kind of animal, and could not have formed a part of the skeleton of any other. Thus, if we present to a skilful comparative anatomist a small bone of the foot of a quadruped, he will not only pronounce with certainty as to the size of the animal to which it belonged, but will say what sort of teeth it must have had—whether it had horns, and whether it fed upon the flesh of other animals, or on vegetable substances. If many detached bones belonging to the same kind of animal be collected, the skill of the comparative anatomist enables him to put them together in their true places; and thus a complete skeleton has been constructed of separate fossil bones, which had belonged to several individuals of the same species. In this application of anatomy to geology, we have a beautiful illustration of the intimate connexion of the sciences with each other.

"In man, all quadrupeds, and other mammalia, there are exactly seven joints or vertebræ in the neck; and so strict is the adherence to this rule, that there is precisely the same number in the short stiff neck of the whale, and the long flexible neck of the giraffe. Reptiles have from three to eight joints—birds many more: the swan, which has the most, is enabled to make the graceful curves of its neck by being provided with twenty-three of those separate vertebræ; but the plesiosaurus (a fossil saurian) has no less than forty-one."

Speaking on this subject, Paley in his *Natural Theology* observes—"I challenge any man to produce, in the joints and pivots of the most complicated or the most flexible machine that ever was contrived, a construction more artificial, or more evidently artificial, than that which is seen in the vertebræ of the human neck. Two things were to be done. The head was to have the power of bending forward and backward; and, at the same time, of turning itself round upon the body to a certain extent. For these purposes, two distinct contrivances are employed. First, the head rests immediately upon the uppermost part of the vertebræ, and is united to it by a *hinge-joint*; upon which joint the head plays freely forward and backward. But then the rotatory motion is unprovided for: therefore, secondly, to make the head capable of this, a farther mechanism is introduced; not between the head and the uppermost bone of the neck, where the hinge is, but between that bone and the next underneath it. This second, or uppermost bone but one, has what anatomists call a process, viz. a projection somewhat similar in size and shape to a tooth—which tooth, entering a corresponding hole or socket in the bone above it, forms a pivot or axle upon which that upper bone, together with the head which it supports, turns freely in a circle. Thus are both motions perfect, without interfering with each other. When we nod the head, we use the hinge-joint, which lies between the head and the first bone of the neck; when we turn the head round, we use the tendon and mortice, which runs between the first bone of the neck and the second. No one can here doubt of the existence of counsel and design.

"The spine, or back-bone, is a chain of joints of very wonderful construction. It was to be firm, yet flexible; *firm*, to support the erect position of the body; *flexible*, to allow of the bending of the trunk in all degrees of curvature. It was further also to be a pipe for the safe conveyance from the brain of the spinal marrow—a substance not only of the first necessity to action, if not to life, but of a nature so delicate and tender, so susceptible of injury, as that any unusual pressure upon it is followed by paralysis or death. Now the spine was not only to furnish the main trunk for the passage of the medullary substance from the brain, but to give out, in the course of its progress, small branches, which being afterwards indefinitely subdivided, might, under the name of nerves, give to every part of the body the power of feeling and motion. The same spine was also to serve another purpose, not less

wanted than the preceding, viz. to afford a basis for the insertion of the muscles, which are spread over the trunk of the body; in which trunk there are not, as in the limbs, cylindrical bones to which they can be fastened. The spine had likewise to furnish a support for the ends of the ribs to rest upon.

"How admirably is all this accomplished! The spine is composed of a great number of bones (in man, of twenty-four,) joined to one another, and compacted by broad bases. The breadth of the bases upon which the parts severally rest, and the closeness of the junction, give to the chain its firmness and stability; the number of parts, and consequent frequency of joints, its flexibility. This flexibility varies in different parts of the chain; is least in the back, where strength more than flexure is wanted; greater in the loins, which it was necessary should be more supple than the back; and greatest of all in the neck, for the free motion of the head. In order to afford a passage for the descent of the spinal marrow, each of these bones is bored through in the middle, in such a manner as that, when put together, the hole in one bone falls into a line, and corresponds with the holes in the two bones contiguous to it; by which means the perforated pieces, when joined, form an entire, close, uninterrupted channel—at least while the spine is upright and at rest. But as a settled posture is inconsistent with its use, a great difficulty still remained, which was, to prevent the vertebræ shifting upon one another, so as to break the line of the canal as often as the body moves or twists. But the vertebræ, by means of these processes and projections, and of the articulations which some of them form with one another at their extremities, are so locked in and confined, as to maintain, in the surfaces of the bones, the relative position nearly unaltered; and to throw the change and pressure produced by flexion almost entirely upon the intervening cartilages or gristle, the springiness and yielding nature of whose substance admits of all the motion which is necessary, without any chasm being produced by a separation of the parts. For the medullary canal giving out in its course a supply of nerves to different parts of the body, notches are made on the upper and lower edge of each vertebræ—two on each edge. When the vertebræ are put together, these notches, exactly fitting, form small holes through which the nerves issue out in pairs, in order to send their branches to every part of the body, and with an equal bounty to both sides of the body."

Again, another author, speaking of the muscles, remarks—"The muscles are distinct portions of flesh, capable of contraction and relaxation. They are composed of fibres of two kinds; the one soft and irritable, of a red colour, from the blood that is in them: these generally constitute the body of the muscle; whilst the other sort are found for the most part in the extremities, and are of a harder texture, and of a white glistening colour: if these are formed into a round slender cord, they are called tendons.

"The muscles are generally attached to the bones by means of tendons, and are so artfully situated, that whatever motion the joint annexed is capable of performing, the muscle is adapted to produce it. The knee and the elbow furnish examples of this agreement. Both being hinge-joints, formed to move backwards or forwards, the muscles belonging to them are placed parallel to the bone, so as, by their contraction or relaxation, to effect that motion, and no other. The shoulder and the hip-joints, by their construction, admit a sort of sweeping or circular action, and are accordingly supplied with muscles adapted to it.

"A joint unfurnished with suitable muscles would be motionless; muscles deprived of the joint would be unavailing. They are necessary to each other; and their union displays the highest marks of wisdom and goodness.

"Most muscles have others opposed to them, which act in a contrary direction, and are called antagonists. Some of these act in succession, as when one muscle, or one set of muscles, bends a limb, another extends it; one elevates a part, another depresses it; one draws it to the right, another to the left. By these opposite powers the part

may be kept in a middle direction, ready to obey when called to act.

"The exquisite and delicate mechanism of different parts of the frame claims our highest admiration; but our wonder is greatly increased, when we consider that it performs its different functions for fifty or sixty years together, with very little diminution of its power. What hinge could the most skilful workman contrive, that might be used as often as our elbow-joint is, for so long a term, without being disordered or worn out? Have we not here a strong proof of the vast superiority of the works of God to the most ingenious contrivances of man?"

"One set of muscles enables us to move a certain part one way, and a different set enables us to move it another way. That we have the power to frown, smile, cough, breathe, to lift up or close our eye-lids, raise or bend our heads, stoop, incline to one side or the other, move our fingers or toes, raise or depress our limbs, walk or sit down, speak or sing, swallow, open or shut our mouths, or perform any action whatever, we owe to particular muscles which are appointed to set that part in motion.

"Surely no one can be acquainted with the art and wisdom so wonderfully displayed in the structure of the human body, without acknowledging that there is a God, and that the work is his: for nothing short of infinite intelligence could have produced any thing so complicated and so perfect."

RECOLLECTIONS OF MY SCHOOL-DAYS.

"Dear the school-boy spot we ne'er forget,
Although we are forgotten."—*Byron.*

INTRODUCTION.

Reader, have you ever, in the course of your life, felt (paradoxical as it may seem) a joyless pleasure in looking back on bygone years, and in reverie transporting yourself to those scenes in which, in days now numbered with those before the flood, with spirits buoyed with youthful enthusiasm, and unfettered by the trammels of a wearying world—ere chilling disappointment had nipped your bright and budding hopes—you have taken an active part, or at least been an anxious spectator. If you answer in the negative, then yours must be indeed an untroubled spirit. The past has been all bright—or, if sad, it has now ceased to disturb you. Your follies and your errors are forgotten, save in the recording angel's page. If you have felt as I have described, I need not further apologize for the intrusion of the following chapters. You know my feelings—you yourself have experienced them. Though joyless may be the pleasure, yet it is a pleasure, to enter once more the busy scenes of boyhood, and again to indulge in its mirth and glee. It is for this reason I write, as my tales are for the most part founded in fact, and indebted very little either to invention or imagining—indeed adhering in every respect to the strictest truth, but where, in some few instances, lest, from the recentness of the circumstances, conjecture might conduct to certainty, I have somewhat disguised facts. I trust I shall be excused using fictitious names, and omitting dates. To many, if not to all, the characters I am about to produce as boys, may appear too much men; but let them remember, that the "march of intellect" was not, at the period of which I write, such as it is now, and they who were at that time school-boys would, to the present age, partly seem men. As for the egotism of devoting my first chapter to "My Own Story," I have no excuse but my desire of introducing myself to my gentle reader.

CHAPTER I.—MY OWN STORY.

"Little shall I grace my cause
In speaking for myself."—*Shakspeare.*

I have, of course, no distinct recollection of any of the incidents attendant on my existence previous to my sixth or seventh year. I have, to be sure, a confused remembrance of facts, which now appear to me as if viewed through the clouded medium of a midnight dream. I still bear in mind the painful impression made on me by the pale and wan-like features of my dying father when bestowing his last benediction, and the flood of tears I

shed in childish sorrow, when removed from his house to that of my grandfather. My grandfather then held a high official situation under government. He was a tall, portly man; and but for a vivacious sparkle in his large grey eye, you might suppose that his years had numbered three-score and ten—taking that, however, into consideration, he might be about sixty-five. How vividly I still see him in my mind's eye, in all the freshness of reality, stalking up and down the long dining-hall, the lapels of his coat thrown back, displaying to advantage his broad and muscular chest! His eyes are fixed thoughtfully on the ground, and that expression of repelling severity, so peculiar to him, is strongly stamped on his fine though rough-cast countenance—his whole appearance bespeaks a mind far from reconciled to itself. But I must not allow imagination to carry me too far. He has long since ceased to be numbered amongst the living. Full well I remember what awe the very creak of his boot called up in my mind, when, approaching our play-room, his footsteps would echo along the narrow passage.

"Yet he was kind."

Often would he take me on his knee, and play with and caress me for hours, then roughly push me from him, and forget to notice me for days together.

I have thought it advisable to give but a hasty sketch of this the early part of my life, as likely to afford neither interest to my reader, nor pleasure to myself, but at once to push forward to the period of my introduction to the world; for such I may consider, immured as I had heretofore been, my entrance into a public boarding-school. All preliminaries being settled, at length the day arrived on which I was to take my departure from a home that, in spite of the uneven temper of my grandfather, was still dear to me. My heart was indeed full, and my trembling lip betrayed the agitation I vainly endeavoured to conceal. The school being distant but five miles from our house, our own car was ordered to carry me thither. In this I was presently seated, accompanied by my maiden aunt, whom, from not being mentioned heretofore, let not my reader suppose an inconsiderable personage. By no means; Miss Letitia Worthington was a lady who, having reached her fortieth year as an immaculate virgin, claimed, or rather demanded as her right, no ordinary proportion of respect. Whether the strictness of her celibacy entitled her to such, it not being (as I suspected) a voluntary virtue, I shall not here question. All I know is, that at that time I was somewhat jealous of paying her the full moiety of her demand, in consequence of which, as well as my having, in certain other small though not inconsiderable matters, amused myself at my dear aunt's expense, and rather think (as my sagacious reader may infer) I failed in gaining her esteem. Be this as it may, certain I am that to her I was indebted, at least in a great measure, for my introduction into the life of a boarding-school, as she never failed reminding my grandfather, at least three times a day, of the injustice he committed in detaining me at home, when I ought to be prosecuting my studies. I trust I felt, at the time, becoming gratitude for her anxiety as to my learning. I cannot, in truth, wonder at, though I may blame myself for, the great indifference with which I treated my aunt, as her appearance and manner were little calculated to obtain for her that courtesy which is ever due to the softer sex. Softer sex!—what a misnomer with regard to her! She, indeed, boasted herself on her masculine address, and, except in the management of pastry and preserves, seldom took any part in matters which are the immediate province of the ladies: but in this she took a more than ordinary pleasure. The fruit season was the only period, indeed, I ever observed her in even a tolerable humour; but then this cheerfulness partook so much of hurry, bustle, and confusion—such scouring of preserving pans, such polishing of skillets, such pounding of sugar, and such boiling of sweetmeats—that, though at the expense of my aunt's temper, I was very glad when the cookery season was ended; albeit I made reprisal of many a sweet sugar-plum, which I ever justly considered legitimate booty. But while I am thus endeavouring to convey some idea of my aunt, we have arrived at our journey's end. Having alighted, we were